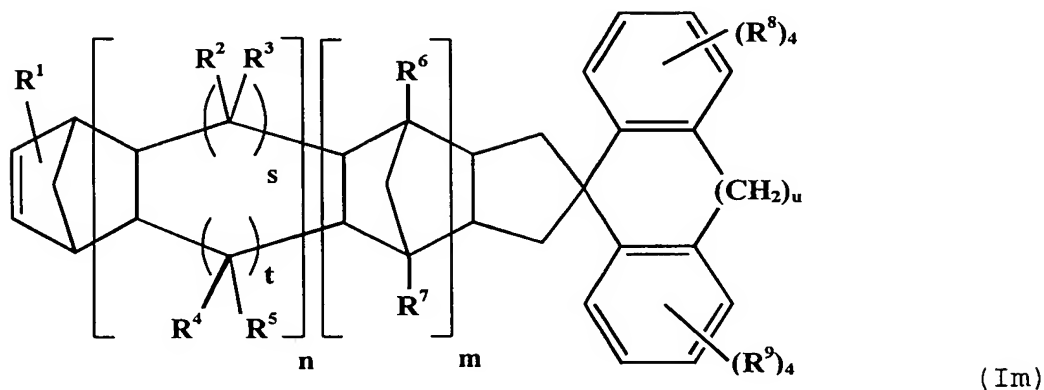


## CLAIMS

1. A norbornene derivative represented by the following formula (Im):



5 wherein R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸ and R⁹ are each independently an atom or a group selected from the group consisting of a hydrogen atom, a halogen atom, a substituted or unsubstituted hydrocarbon group of 1 to 30 carbon atoms which may have a linkage containing an  
 10 oxygen atom, a nitrogen atom, a sulfur atom or a silicon atom, and a polar group,

s, t and u are each independently an integer of 0 to 3, and

m and n are each independently an integer of 0 to 2.

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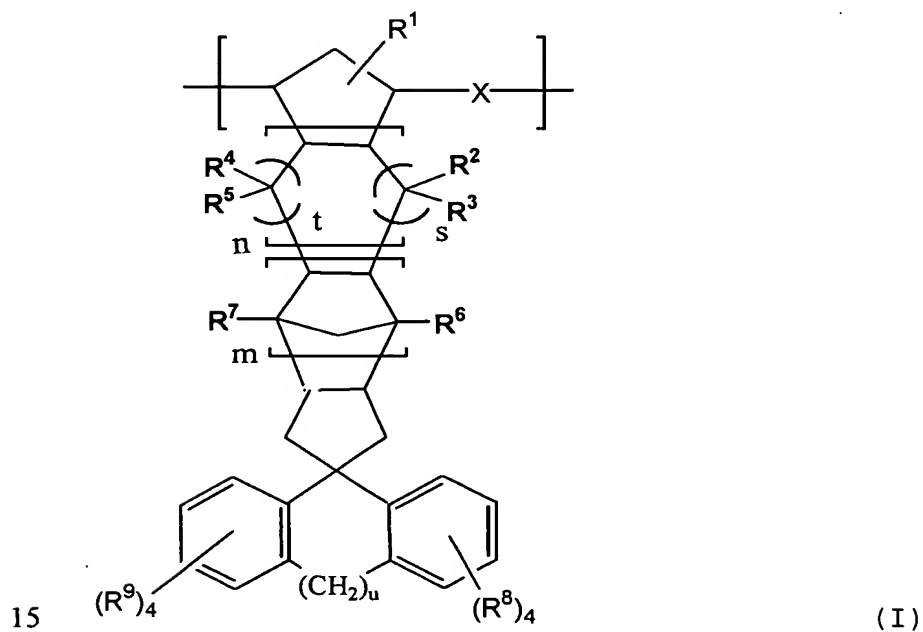
2. The norbornene derivative as claimed in claim 1, wherein in the formula (Im), n is 0 and m is 0 or 1.

3. The norbornene derivative as claimed in claim 1 or 2, wherein in the formula (Im), u is 0 or 1.

4. The norbornene derivative as claimed in claim 1, wherein in the formula (Im), n is 1 or 2, s and t are each 1, and u is 0 or 1.

5. The norbornene derivative as claimed in any one of claims 1 to 4, wherein in the formula (Im), 3 or more of  $R^8$  and 3 or more of  $R^9$  are each a hydrogen atom.

6. A norbornene ring-opened (co)polymer having structural units (I) represented by the following formula (I):



wherein m and n are each independently an integer of 0 to 2,

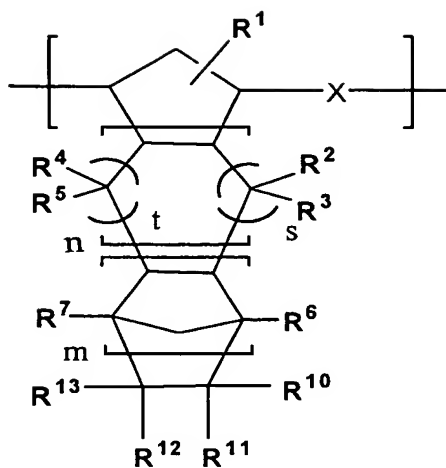
X is a group represented by the formula  $-\text{CH}=\text{CH}-$  or a group represented by the formula  $-\text{CH}_2\text{CH}_2-$ ,

5         $\text{R}^1, \text{R}^2, \text{R}^3, \text{R}^4, \text{R}^5, \text{R}^6, \text{R}^7, \text{R}^8$  and  $\text{R}^9$  are each independently an atom or a group selected from the group consisting of a hydrogen atom, a halogen atom, a substituted or unsubstituted hydrocarbon group of 1 to 30 carbon atoms which may have a linkage containing an  
10 oxygen atom, a nitrogen atom, a sulfur atom or a silicon atom, and a polar group, and

s, t and u are each independently an integer of 0 to 3.

15        7. The norbornene ring-opened (co)polymer as claimed in claim 6, wherein the structural units (I) are contained in amounts of not less than 2% by mol of all structural units.

20        8. The norbornene ring-opened (co)polymer as claimed in claim 6 or 7, which further has structural units (II) represented by the following formula (II):



(II)

wherein  $m$  and  $n$  are each independently an integer of 0 to 2,

$X$  is a group represented by the formula  $-\text{CH}=\text{CH}-$  or a group represented by the formula  $-\text{CH}_2\text{CH}_2-$ ,

$R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$  and  $R^7$  are each independently an atom or a group selected from the group consisting of a hydrogen atom, a halogen atom, a substituted or unsubstituted hydrocarbon group of 1 to 30 carbon atoms which may have a linkage containing an oxygen atom, a nitrogen atom, a sulfur atom or a silicon atom, and a polar group,

$R^{10}$ ,  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  are each independently an atom or a group selected from the group consisting of a hydrogen atom, a halogen atom, a substituted or unsubstituted hydrocarbon group of 1 to 30 carbon atoms which may have a linkage containing an oxygen atom, a nitrogen atom, a

sulfur atom or a silicon atom, and a polar group, they may be bonded to each other to form a monocyclic or polycyclic group which may have a hetero atom, and  $R^{10}$  and  $R^{11}$ , or  $R^{12}$  and  $R^{13}$  may be united to form a divalent hydrocarbon group, and

s and t are each independently an integer of 0 to 3.

9. The norbornene ring-opened (co)polymer as claimed in claim 8, wherein the structural units (II) are contained in amounts of not more than 98% by mol of all structural units.

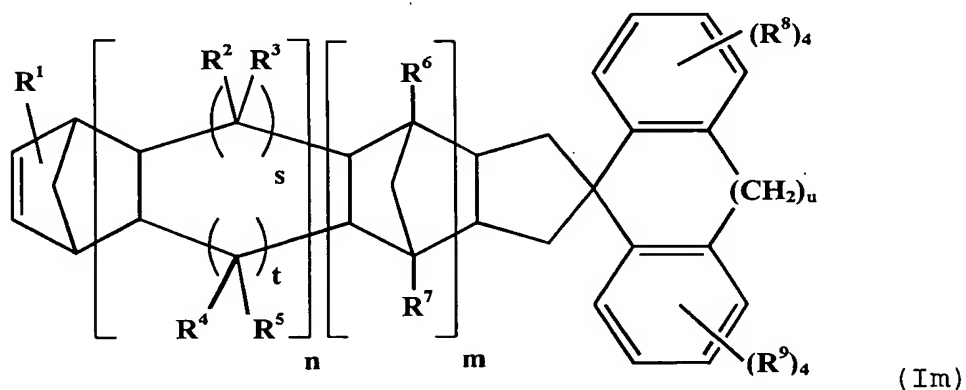
10. The norbornene ring-opened (co)polymer as claimed in any one of claims 6 to 9, wherein the total amount of the structural units (I) and the structural units (II) is not less than 5% by mol of all structural units.

11. The norbornene ring-opened (co)polymer as claimed in any one of claims 6 to 10, wherein X in an amount of not less than 90% by mol of the total amount of X in the structural units (I) and the structural units (II) is a group represented by  $-\text{CH}_2\text{CH}_2-$ .

12. The norbornene ring-opened (co)polymer as claimed in any one of claims 6 to 11, wherein the structural units (I) are structural units of the formula (I) in which m is 0, n is 0, and u is 0.

5

13. A process for preparing a norbornene ring-opened (co)polymer, comprising ring-opening (co)polymerizing a norbornene monomer (Im) represented by the following formula (Im) optionally together with a  
10 norbornene monomer (IIIm) represented by the following formula (IIIm);

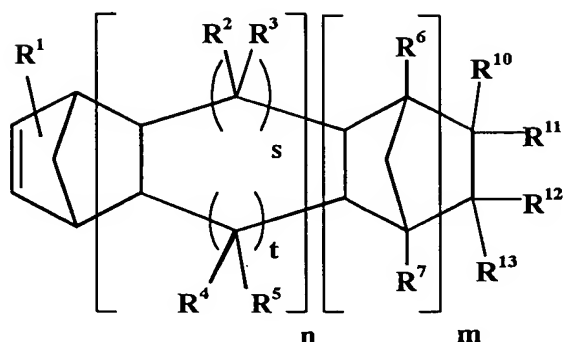


wherein m and n are each independently an integer of 0 to 2,

15  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  and  $R^9$  are each independently an atom or a group selected from the group consisting of a hydrogen atom, a halogen atom, a substituted or unsubstituted hydrocarbon group of 1 to 30 carbon atoms which may have a linkage containing an

oxygen atom, a nitrogen atom, a sulfur atom or a silicon atom, and a polar group, and

s, t and u are each independently an integer of 0 to 3;



(IIIm)

wherein m and n are each independently an integer of 0 to 2,

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup> and R<sup>7</sup> are each independently an atom or a group selected from the group consisting of a hydrogen atom, a halogen atom, a substituted or unsubstituted hydrocarbon group of 1 to 30 carbon atoms which may have a linkage containing an oxygen atom, a nitrogen atom, a sulfur atom or a silicon atom, and a polar group,

R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> are each independently an atom or a group selected from the group consisting of a hydrogen atom, a halogen atom, a substituted or unsubstituted hydrocarbon group of 1 to 30 carbon atoms which may have a linkage containing an oxygen atom, a nitrogen atom, a

sulfur atom or a silicon atom, and a polar group, they may be bonded to each other to form a monocyclic or polycyclic group which may have a hetero atom, and  $R^{10}$  and  $R^{11}$ , or  $R^{12}$  and  $R^{13}$  may be united to form a divalent

5 hydrocarbon group, and

s and t are each independently an integer of 0 to 3.

14. The process for preparing a norbornene ring-opened (co)polymer as claimed in claim 13, comprising  
10 ring-opening (co)polymerizing the norbornene monomer (Im) represented by the formula (Im) optionally together with the norbornene monomer (IIIm) represented by the formula (IIIm) and then hydrogenating the resulting (co)polymer.